



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A61F 13/02	A1	(11) International Publication Number: WO 00/30580 (43) International Publication Date: 2 June 2000 (02.06.00)
(21) International Application Number: PCT/DK99/00658 (22) International Filing Date: 25 November 1999 (25.11.99) (30) Priority Data: PA 1998 01547 25 November 1998 (25.11.98) DK (71) Applicant (for all designated States except US): COLOPLAST A/S [DK/DK]; Høltedam 1, DK-3050 Humlebæk (DK). (72) Inventors; and (75) Inventors/Applicants (for US only): MARCUSSEN, Jan [DK/DK]; Kirkestien 40, DK-2630 Taastrup (DK). MADSEN, Lars, Bo [DK/DK]; Ibstrupvej 49, DK-2820 Gentofte (DK). HANSEN, Grazyna [DK/DK]; Fuglsangparken 123, DK-3520 Farum (DK). (74) Common Representative: COLOPLAST A/S; Patent Department, Kim Nilausen, Høltedam 1, DK-3050 Humlebæk (DK).		(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: A LAYERED PRODUCT READY FOR NON-TOUCH APPLICATION AND A METHOD FOR PRODUCING SUCH A PRODUCT <div style="text-align: center;"> </div>		
(57) Abstract <p>A layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer, and which package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to the adhesive layer or the release layer and the top and bottom layer are releasably sealed to each other isolating the adhesive layer from the surroundings, and where the cover layer is releasably fastened to the top layer.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Licchtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

TITLE

A layered product ready for non-touch application and a method for producing such a product.

FIELD OF THE INVENTION

- 5 The present invention relates to a layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer. The package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to
- 10 the adhesive layer and the top and bottom layers are releasably sealed to each other isolating the adhesive layer from the surroundings.

BACKGROUND OF THE INVENTION

- It is desirable to be able to apply an adhesive product such as a dressing without touching the adhesive layer in order to avoid reducing the adhesiveness of the
- 15 product. Also it is desirable to be able to apply a sterile dressing to a patients skin without touching the surface of the dressing that is to come into contact with the skin in order to avoid introducing bacteria to the wound.

- The prior art discloses several methods for facilitating handling of wound dressings and one method is described in US patent no. 5.106.629 (NDM Acquisition
- 20 Corp.). The product of this patent is constituted of three layers: a dimensionally stable backing layer, a transparent adhesive layer and a release layer. When applying the dressing the release layer is removed by using an extending tab attached thereto, to expose the adhesive layer. The remaining layers of the wound dressing are then applied to the wound site with the adhesive layer
- 25 directly contacting the wound. Once these layers are in place, the dimensionally stable backing member is removed, preferably using an extending tab attached hereto.

Another method is described in WO 97/43991 (Coloplast A/S). The object of this invention is to ensure easy handling of a wound dressing which dressing

comprises a main part and a handle part. The main part comprises a carrier layer, an adhesive layer and a release liner. The handle part comprises one or more tab members designed for use as a "non-touch" grip when applying the dressing to the skin. The tab member and the main part of the dressing do not
5 have all layers in common, as it reduces the force which need to be applied in order to remove the tab members after applying the dressing.

These two documents explain how to handle the product without touching the adhesive during application but they do not combine discrete packaging of the products with non-touch application of the products.

- 10 A third product - a medical adhesive composite - is described in WO 98/00080 (Minnesota Mining and Manufacturing Company). This medical adhesive composite, e.g. a dressing, is combined with a package, the packaged product comprises a top sheet of packaging material, a carrier material, a conformable backing material, a pressure sensitive adhesive and a bottom sheet of packaging
15 material with a release surface. The carrier material is preferably substantially more rigid than the backing material in order to prevent the backing from wrinkling or folding onto itself in whole or in part during application of the dressing. The carrier material is capable of being attached to the backing by any suitable method, such as heat sealing, adhesives, mechanical bonds, wax
20 coatings etc. The bond is secure, yet releasable, i.e. the carrier and backing can be separated without destroying the integrity of the backing or the bond between the adhesive on the backing and the skin of a patient. In addition the bond between the carrier and the backing should be stronger than the bond between the adhesive on the bottom face of the backing and the release liner or surface
25 of the packaging. Adhering the medical adhesive composites directly to the bottom sheet of the packaging material rather than including a separate release liner on the product simplifies the process of dispensing the medical adhesive composites. The bond strength between the release surface and the bottom sheet is greater than the bond strength between the release surface and the
30 adhesive on the bottom face of the backing.

This document shows how it is possible to include packaging of the product into a single process but the used process is rather complicated and the packaged product may be difficult to apply.

In EP patent application No. 938 882 is disclosed a release paper in the form of
5 a sheet with several discrete plasters. The plasters comprise an adhesive layer, covered on one side with the release paper and on the other side with a top film. A pouch covering the wound area may be located between the adhesive and the release paper. The plasters are separated from each others by a perforated line in the release paper. The product is not in the form of a sealed package as it
10 does not comprise a sealing cover layer on top of the construction.

BRIEF DESCRIPTION OF THE INVENTION

The object of the invention is to provide a product in a discrete package which product is easy to handle without the user touching the adhesive of the product which will be touching the surface to which the product is applied, and at the
15 same time this product is easier and less expensive to produce.

This object is achieved by fastening the cover layer releasably to the top layer of the package in order to make it possible to use the top layer as a non-touch grip.

A carrier layer is a coherent web which is used to move the layered product through the production process even after other layers have been cut into their
20 final size and it reduces the cost of production when the carrier layer is made a part of the finished product instead of wasting the carrier layer totally or partly during the production process.

In order to make the process very simple the top layer may be the carrier layer but it is also possible to use a second layer as carrier layer and in this case the
25 second layer may be present between the cover layer and the top layer in the finished product. In this case the bond strength R1 between the cover layer and the second layer, is smaller than the bond strength S1 between the second layer and the top layer. In fact S1 may be so large it is considered unreleasably.

It is possible to add a release layer as a separate layer and use standard material for the process otherwise the release layer can be a release surface on the upper side of the bottom layer of the package.

- In order to make the application procedure as simple as possible for the user of the product it is advantageous that:
- 1) the bond strength R_1 between the top layer of the package or a second layer and the cover layer is higher than the bond strength R_2 between the adhesive layer and the release layer, and
 - 2) the bond strength R_4 between the release layer and the bottom layer of the package is higher than the bond strength R_2 between the adhesive layer and the release layer, and
 - 3) the bond strength between the adhesive layer and the surface to which the product has been applied is higher than the bond strength R_1 .

When the user apply a dressing which agrees with the above demands for the bond strength between the different layers the user first separates the top layer and the bottom layer of the package. When doing this the release layer - whether this layer is a part of the bottom layer or a separate layer - will come off together with the bottom layer and afterwards the bottom layer and the release layer can be thrown away. This leaves the user with the top layer to which the product comprising the cover layer and an adhesive layer is attached. Now the user can use the top layer of the package to handle the product and assure the product is placed correctly. When the adhesion between the layered product and the surface to which the product is fastened is higher than the bond strength between the top layer and the cover layer the user can remove the top layer of the package from the applicated product without problems and throw it away.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a cross-sectional view of a product and a package according to the present invention.

Figure 2 is a schematic diagram of a continuous method of manufacturing a product according to the present invention.

Figure 3 is a schematic diagram of a batchwise method of manufacturing a product according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 shows a cross-sectional view of a product and a package. The package is constituted by two outer layers, a top layer 1 and a bottom layer 2. These two layers are sealed together at 3 in a way that completely isolates the product from the surroundings and the sealing represents a bond strength of R3.

A cover layer 4 is placed below the top layer and these two layers are releasably fastened to each other with the bond strength R1. The function of the cover layer 4 is to establish a non-adhesive and comfortable upper side of the product when the product is in use. When the product is a dressing the cover layer can be a woven or non-woven e.g. a polymeric material such as a polyurethane with a certain permeativity for water. It is also possible to place a separate layer (not shown) e.g. a carrier layer between the top layer and the cover layer and then the bond strength S1 between the top layer and the optional carrier layer can suitably be considerably higher than the bond strength R1 between cover layer and the carrier layer.

Below the cover layer 4 is an adhesive layer 5. The cover layer 4 and the adhesive layer 5 are unreleasably bonded to each other. By unreleasably bonded is understood that it is not possible to separate the two layers and keeping them both intact and according to this definition of "unreleasably" the two layers may consist of one layer with different surface structure on the upper and lower side. If the product is a dressing the adhesive may contain hydrocolloids.

The adhesive layer 5 is protected by a release surface. In Figure 1 the release surface is constituted by a separate layer, a release layer 6, but the release surface may also be a part of the surface of the bottom layer having releasing qualities. The bond strength between the adhesive layer 5 and the release surface is R2. The bond strength between an optional separate release layer 6 and the bottom layer 2 is R4.

Figure 2 shows a schematic diagram of a continuous process which may be used for manufacturing the product of this invention. The primary layered web 9 that enters the process comprises a carrier layer which in this example is the later top layer 1 of the package, a cover layer 4 which will form a non-adhesive surface of the applicated product and a layer of or discrete portions of adhesive 5 which has/have been fastened unreleasably to the cover layer 4.

A roll 10 contains a supply of release liner and the release liner is attached to the primary layered web 9 at the roll 11. Hereafter the primary web 9 to which the release liner now is attached pass a station 12 where the layers of the web which constitutes the product: The cover layer 4, the adhesive layer 5 and the release layer 6, are cut into desired discrete products. The weed 13 from this action is removed and only the carrier layer - the top layer 1 of the package - still constitutes a coherent layer.

When the weed 13 has been removed it is time to add the bottom layer of the package to the line of products. A supply roll of the bottom layer is kept at 14 and the bottom layer is attached to the line of products at the station 15.

After the bottom layer of the package has been attached to the line of products, the individual products has to be isolated. This is done at the station 16 where the top and the bottom layer of the package is fastened releasably to each other by e.g. peel welding.

It is also possible to apply a more batchwise process for manufacturing of the products. This is especially advantageous if the process producing the web 9 is very fast and it is difficult for a single packaging machine to keep up.

After the products have passed the roll 12 of figure 2 where the line of products have been die cut, the endless line of products is cut up into units containing several discrete products 22 (in Figure 3 the units contain four discrete products). The units are then collected and moved to a temporary storage or directly to one or more different packing machines. In order to be able to pile the units for storage or transport the units have to be provided with a release liner.

In Figure 3 is a schematic diagram of a batchwise process where the units consisting of discrete products 22 are arriving to the packing machines in piles 21. The top unit is moved forward and placed on the bottom layer 23 of the package to which layer the releaseliner covered surface of the product is
5 fastened with the bond strength R4 by e.g. gluing or peel welding.

In this process the bottom layer 23 and the top layer 24 of the package is constituted by a single sheet of package material. After placing and fastening the unit on the bottom layer the top layer is folded over the unit and fastened to the bottom layer by the bond strength R3 and to the cover layer of the products by
10 the bond strength R1 e.g. in such a way that the products are isolated as discrete products.

CLAIMS

1. A layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer, and which
5 package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to the adhesive layer or the release layer and the top and bottom layers are releasably sealed to each other isolating the adhesive layer from the surroundings, wherein the cover layer is releasably fastened to the top layer.
- 10 2. A layered product in a package ready for non-touch application according to claim 1 wherein a carrier layer forms a part of the packaged product.
3. A layered product in a package ready for non-touch application according to claim 2 wherein the top layer is also the carrier layer.
4. A layered product in a package ready for non-touch application according to
15 claim 2 wherein a second layer forms the carrier layer and the second layer is present between the cover layer and the top layer in the finished product.
5. A layered product in a package ready for non-touch application according to claim 4 wherein the bond strength R1 between the cover layer and the second layer is smaller than the bond strength S1 between the second layer and the top
20 layer.
6. A layered product in a package ready for non-touch application according to claim 1-4 wherein a separate release layer is present between the adhesive layer and the bottom layer.

7. A layered product in a package ready for non-touch application according to claim 1-5 wherein

- 1) the bond strength R1 between the top layer of the package or a second layer and the cover layer is higher than the bond strength R2 between the adhesive layer and the release layer, and
- 2) the bond strength R4 between the release layer and the bottom layer of the package is higher than the bond strength R2 between the adhesive layer and the release layer, and
- 3) the bond strength between the adhesive layer and the surface to which the product has been applied is higher than the bond strength R1.

8. A method for producing a layered product in a package comprising a top and a bottom layer ready for non-touch application which method comprises the following steps:

- a) providing a web comprising at least three layers: A carrier layer connected to or constituting the top layer of a package, a cover layer and an adhesive layer which two layers are unreleasably fastened to each other,
- c) die cutting the product into discrete portions still attached to the carrier layer,
- d) attaching the bottom layer or a release layer to the adhesive side of the product,
- e) isolating the product by sealing the top layer to the bottom layer about the periphery of the product.

9. A method for producing a layered product in a package comprising a top and a bottom layer and ready for non-touch application which method comprises the following steps:

- a) providing a web comprising at least three layers: A carrier layer connected to or constituting a top layer of a package, a cover layer and an adhesive layer which two layers are unreleasably fastened to each other,
- b) attaching a release layer to the adhesive side of the product,
- c) die cutting the product into discrete portions still attached to the carrier layer,
- d) attaching a bottom layer to the adhesive side of the product,
- e) sealing the top layer to the bottom layer about the periphery of the product.

10. A method for applying a layered product packed in a package and prepared for non-touch application wherein

1) a top and a bottom layer comprising the package is bonded to each other by the bond strength R3 and when using the product these two layers are

5 separated,

2) the layered product is connected to the top layer by a bond strength R1 and to a release surface by a bond strength R2 as the bond strength R1 is higher than R2 the layered product will stay fastened to the top layer when the top and the bottom layers are separated while the bottom layer and an optional release layer

10 is removed,

3) the layered product is placed on the surface to which the product needs to be applied to and the bond strength between this surface and the layered product is higher than the bond strength R1 which causes the top layer to be removed .

1/3

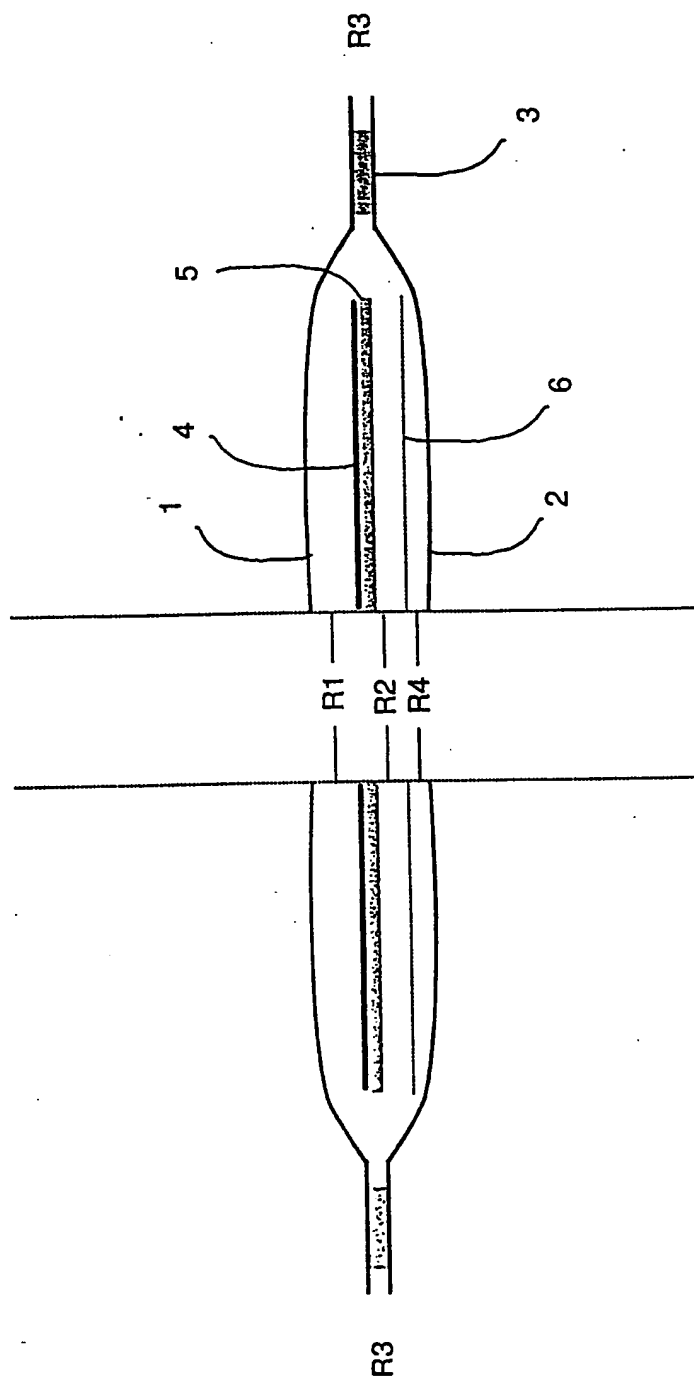


Fig. 1

PCL XL error

Subsystem: KERNEL

Error: IllegalOperatorSequence

Operator: 0x1b

Position: 344

PCT

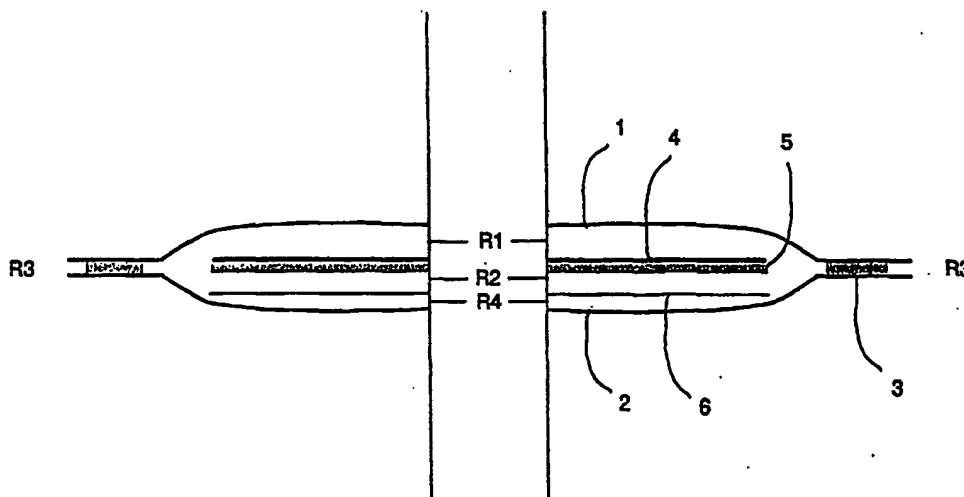
WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A61F 13/02	A1	(11) International Publication Number: WO 00/30580 (43) International Publication Date: 2 June 2000 (02.06.00)
<p>(21) International Application Number: PCT/DK99/00658</p> <p>(22) International Filing Date: 25 November 1999 (25.11.99)</p> <p>(30) Priority Data: PA 1998 01547 25 November 1998 (25.11.98) DK</p> <p>(71) Applicant (for all designated States except US): COLOPLAST A/S [DK/DK]; Holtedam 1, DK-3050 Humlebæk (DK).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): MARCUSSEN, Jan [DK/DK]; Kirkestien 40, DK-2630 Taastrup (DK). MADSEN, Lars, Bo [DK/DK]; Ibstrupvej 49, DK-2820 Gentofte (DK). HANSEN, Grazyna [DK/DK]; Fuglsangparken 123, DK-3520 Farum (DK).</p> <p>(74) Common Representative: COLOPLAST A/S; Patent Department, Kim Nilausen, Holtedam 1, DK-3050 Humlebæk (DK).</p>	<p>(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p>	

(54) Title: **A LAYERED PRODUCT READY FOR NON-TOUCH APPLICATION AND A METHOD FOR PRODUCING SUCH A PRODUCT**



(57) Abstract

A layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer, and which package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to the adhesive layer or the release layer and the top and bottom layer are releasably sealed to each other isolating the adhesive layer from the surroundings, and where the cover layer is releasably fastened to the top layer.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LJ	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

TITLE

A layered product ready for non-touch application and a method for producing such a product.

FIELD OF THE INVENTION

- 5 The present invention relates to a layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer. The package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to
- 10 the adhesive layer and the top and bottom layers are releasably sealed to each other isolating the adhesive layer from the surroundings.

BACKGROUND OF THE INVENTION

- It is desirable to be able to apply an adhesive product such as a dressing without touching the adhesive layer in order to avoid reducing the adhesiveness of the
- 15 product. Also it is desirable to be able to apply a sterile dressing to a patients skin without touching the surface of the dressing that is to come into contact with the skin in order to avoid introducing bacteria to the wound.

- The prior art discloses several methods for facilitating handling of wound dressings and one method is described in US patent no. 5.106.629 (NDM Acquisition
- 20 Corp.). The product of this patent is constituted of three layers: a dimensionally stable backing layer, a transparent adhesive layer and a release layer. When applying the dressing the release layer is removed by using an extending tab attached thereto, to expose the adhesive layer. The remaining layers of the wound dressing are then applied to the wound site with the adhesive layer
- 25 directly contacting the wound. Once these layers are in place, the dimensionally stable backing member is removed, preferably using an extending tab attached hereto.

Another method is described in WO 97/43991 (Coloplast A/S). The object of this invention is to ensure easy handling of a wound dressing which dressing

comprises a main part and a handle part. The main part comprises a carrier layer, an adhesive layer and a release liner. The handle part comprises one or more tab members designed for use as a "non-touch" grip when applying the dressing to the skin. The tab member and the main part of the dressing do not
5 have all layers in common, as it reduces the force which need to be applied in order to remove the tab members after applying the dressing.

These two documents explain how to handle the product without touching the adhesive during application but they do not combine discrete packaging of the products with non-touch application of the products.

- 10 A third product - a medical adhesive composite - is described in WO 98/00080 (Minnesota Mining and Manufacturing Company). This medical adhesive composite, e.g. a dressing, is combined with a package, the packaged product comprises a top sheet of packaging material, a carrier material, a conformable backing material, a pressure sensitive adhesive and a bottom sheet of packaging
15 material with a release surface. The carrier material is preferably substantially more rigid than the backing material in order to prevent the backing from wrinkling or folding onto itself in whole or in part during application of the dressing. The carrier material is capable of being attached to the backing by any suitable method, such as heat sealing, adhesives, mechanical bonds, wax
20 coatings etc. The bond is secure, yet releasable, i.e. the carrier and backing can be separated without destroying the integrity of the backing or the bond between the adhesive on the backing and the skin of a patient. In addition the bond between the carrier and the backing should be stronger than the bond between the adhesive on the bottom face of the backing and the release liner or surface
25 of the packaging. Adhering the medical adhesive composites directly to the bottom sheet of the packaging material rather than including a separate release liner on the product simplifies the process of dispensing the medical adhesive composites. The bond strength between the release surface and the bottom sheet is greater than the bond strength between the release surface and the
30 adhesive on the bottom face of the backing.

This document shows how it is possible to include packaging of the product into a single process but the used process is rather complicated and the packaged product may be difficult to apply.

In EP patent application No. 938 882 is disclosed a release paper in the form of
5 a sheet with several discrete plasters. The plasters comprise an adhesive layer, covered on one side with the release paper and on the other side with a top film. A pouch covering the wound area may be located between the adhesive and the release paper. The plasters are separated from each others by a perforated line in the release paper. The product is not in the form of a sealed package as it
10 does not comprise a sealing cover layer on top of the construction.

BRIEF DESCRIPTION OF THE INVENTION

The object of the invention is to provide a product in a discrete package which product is easy to handle without the user touching the adhesive of the product which will be touching the surface to which the product is applied, and at the
15 same time this product is easier and less expensive to produce.

This object is achieved by fastening the cover layer releasably to the top layer of the package in order to make it possible to use the top layer as a non-touch grip.

A carrier layer is a coherent web which is used to move the layered product through the production process even after other layers have been cut into their
20 final size and it reduces the cost of production when the carrier layer is made a part of the finished product instead of wasting the carrier layer totally or partly during the production process.

In order to make the process very simple the top layer may be the carrier layer but it is also possible to use a second layer as carrier layer and in this case the
25 second layer may be present between the cover layer and the top layer in the finished product. In this case the bond strength R1 between the cover layer and the second layer, is smaller than the bond strength S1 between the second layer and the top layer. In fact S1 may be so large it is considered unreleasably.

It is possible to add a release layer as a separate layer and use standard material for the process otherwise the release layer can be a release surface on the upper side of the bottom layer of the package.

- In order to make the application procedure as simple as possible for the user of the product it is advantageous that:
- 1) the bond strength R_1 between the top layer of the package or a second layer and the cover layer is higher than the bond strength R_2 between the adhesive layer and the release layer, and
 - 2) the bond strength R_4 between the release layer and the bottom layer of the package is higher than the bond strength R_2 between the adhesive layer and the release layer, and
 - 3) the bond strength between the adhesive layer and the surface to which the product has been applied is higher than the bond strength R_1 .

When the user apply a dressing which agrees with the above demands for the bond strength between the different layers the user first separates the top layer and the bottom layer of the package. When doing this the release layer - whether this layer is a part of the bottom layer or a separate layer - will come off together with the bottom layer and afterwards the bottom layer and the release layer can be thrown away. This leaves the user with the top layer to which the product comprising the cover layer and an adhesive layer is attached. Now the user can use the top layer of the package to handle the product and assure the product is placed correctly. When the adhesion between the layered product and the surface to which the product is fastened is higher than the bond strength between the top layer and the cover layer the user can remove the top layer of the package from the applicated product without problems and throw it away.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a cross-sectional view of a product and a package according to the present invention.

Figure 2 is a schematic diagram of a continuous method of manufacturing a product according to the present invention.

Figure 3 is a schematic diagram of a batchwise method of manufacturing a product according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 shows a cross-sectional view of a product and a package. The package is constituted by two outer layers, a top layer 1 and a bottom layer 2. These two layers are sealed together at 3 in a way that completely isolates the product from the surroundings and the sealing represents a bond strength of R3. A cover layer 4 is placed below the top layer and these two layers are releasably fastened to each other with the bond strength R1. The function of the cover layer 4 is to establish a non-adhesive and comfortable upper side of the product when the product is in use. When the product is a dressing the cover layer can be a woven or non-woven e.g. a polymeric material such as a polyurethane with a certain permeativity for water. It is also possible to place a separate layer (not shown) e.g. a carrier layer between the top layer and the cover layer and then the bond strength S1 between the top layer and the optional carrier layer can suitably be considerably higher than the bond strength R1 between cover layer and the carrier layer.

Below the cover layer 4 is an adhesive layer 5. The cover layer 4 and the adhesive layer 5 are unreleasably bonded to each other. By unreleasably bonded is understood that it is not possible to separate the two layers and keeping them both intact and according to this definition of "unreleasably" the two layers may consist of one layer with different surface structure on the upper and lower side. If the product is a dressing the adhesive may contain hydrocolloids.

The adhesive layer 5 is protected by a release surface. In Figure 1 the release surface is constituted by a separate layer, a release layer 6, but the release surface may also be a part of the surface of the bottom layer having releasing qualities. The bond strength between the adhesive layer 5 and the release surface is R2. The bond strength between an optional separate release layer 6 and the bottom layer 2 is R4.

Figure 2 shows a schematic diagram of a continuous process which may be used for manufacturing the product of this invention. The primary layered web 9 that enters the process comprises a carrier layer which in this example is the later top layer 1 of the package, a cover layer 4 which will form a non-adhesive surface of the applicated product and a layer of or discrete portions of adhesive 5 which has/have been fastened unreleasably to the cover layer 4.

A roll 10 contains a supply of release liner and the release liner is attached to the primary layered web 9 at the roll 11. Hereafter the primary web 9 to which the release liner now is attached pass a station 12 where the layers of the web which constitutes the product: The cover layer 4, the adhesive layer 5 and the release layer 6, are cut into desired discrete products. The weed 13 from this action is removed and only the carrier layer - the top layer 1 of the package - still constitutes a coherent layer.

When the weed 13 has been removed it is time to add the bottom layer of the package to the line of products. A supply roll of the bottom layer is kept at 14 and the bottom layer is attached to the line of products at the station 15.

After the bottom layer of the package has been attached to the line of products, the individual products has to be isolated. This is done at the station 16 where the top and the bottom layer of the package is fastened releasably to each other by e.g. peel welding.

It is also possible to apply a more batchwise process for manufacturing of the products. This is especially advantageous if the process producing the web 9 is very fast and it is difficult for a single packaging machine to keep up.

After the products have passed the roll 12 of figure 2 where the line of products have been die cut, the endless line of products is cut up into units containing several discrete products 22 (in Figure 3 the units contain four discrete products). The units are then collected and moved to a temporary storage or directly to one or more different packing machines. In order to be able to pile the units for storage or transport the units have to be provided with a release liner.

In Figure 3 is a schematic diagram of a batchwise process where the units consisting of discrete products 22 are arriving to the packing machines in piles 21. The top unit is moved forward and placed on the bottom layer 23 of the package to which layer the releaseliner covered surface of the product is
5 fastened with the bond strength R4 by e.g. gluing or peel welding.

In this process the bottom layer 23 and the top layer 24 of the package is constituted by a single sheet of package material. After placing and fastening the unit on the bottom layer the top layer is folded over the unit and fastened to the bottom layer by the bond strength R3 and to the cover layer of the products by
10 the bond strength R1 e.g. in such a way that the products are isolated as discrete products.

CLAIMS

1. A layered product in a package ready for non-touch application which product comprises a cover layer to which an adhesive layer is unreleasably fastened and a release layer which is releasably fastened to the adhesive layer, and which
5 package comprises a top layer and a bottom layer where the top layer is next to the cover layer and the bottom layer is next to the adhesive layer or the release layer and the top and bottom layers are releasably sealed to each other isolating the adhesive layer from the surroundings, wherein the cover layer is releasably fastened to the top layer.
- 10 2. A layered product in a package ready for non-touch application according to claim 1 wherein a carrier layer forms a part of the packaged product.
3. A layered product in a package ready for non-touch application according to claim 2 wherein the top layer is also the carrier layer.
4. A layered product in a package ready for non-touch application according to
15 claim 2 wherein a second layer forms the carrier layer and the second layer is present between the cover layer and the top layer in the finished product.
5. A layered product in a package ready for non-touch application according to claim 4 wherein the bond strength R1 between the cover layer and the second layer is smaller than the bond strength S1 between the second layer and the top
20 layer.
6. A layered product in a package ready for non-touch application according to claim 1-4 wherein a separate release layer is present between the adhesive layer and the bottom layer.

7. A layered product in a package ready for non-touch application according to claim 1-5 wherein

- 1) the bond strength R1 between the top layer of the package or a second layer and the cover layer is higher than the bond strength R2 between the adhesive layer and the release layer, and
- 2) the bond strength R4 between the release layer and the bottom layer of the package is higher than the bond strength R2 between the adhesive layer and the release layer, and
- 3) the bond strength between the adhesive layer and the surface to which the product has been applied is higher than the bond strength R1.

8. A method for producing a layered product in a package comprising a top and a bottom layer ready for non-touch application which method comprises the following steps:

- a) providing a web comprising at least three layers: A carrier layer connected to or constituting the top layer of a package, a cover layer and an adhesive layer which two layers are unreleasably fastened to each other,
- c) die cutting the product into discrete portions still attached to the carrier layer,
- d) attaching the bottom layer or a release layer to the adhesive side of the product,
- e) isolating the product by sealing the top layer to the bottom layer about the periphery of the product.

9. A method for producing a layered product in a package comprising a top and a bottom layer and ready for non-touch application which method comprises the following steps:

- a) providing a web comprising at least three layers: A carrier layer connected to or constituting a top layer of a package, a cover layer and an adhesive layer which two layers are unreleasably fastened to each other,
- b) attaching a release layer to the adhesive side of the product,
- c) die cutting the product into discrete portions still attached to the carrier layer,
- d) attaching a bottom layer to the adhesive side of the product,
- e) sealing the top layer to the bottom layer about the periphery of the product.

10. A method for applying a layered product packed in a package and prepared for non-touch application wherein

1) a top and a bottom layer comprising the package is bonded to each other by the bond strength R3 and when using the product these two layers are

5 separated,

2) the layered product is connected to the top layer by a bond strength R1 and to a release surface by a bond strength R2 as the bond strength R1 is higher than R2 the layered product will stay fastened to the top layer when the top and the bottom layers are separated while the bottom layer and an optional release layer

10 is removed,

3) the layered product is placed on the surface to which the product needs to be applied to and the bond strength between this surface and the layered product is higher than the bond strength R1 which causes the top layer to be removed .

1/3

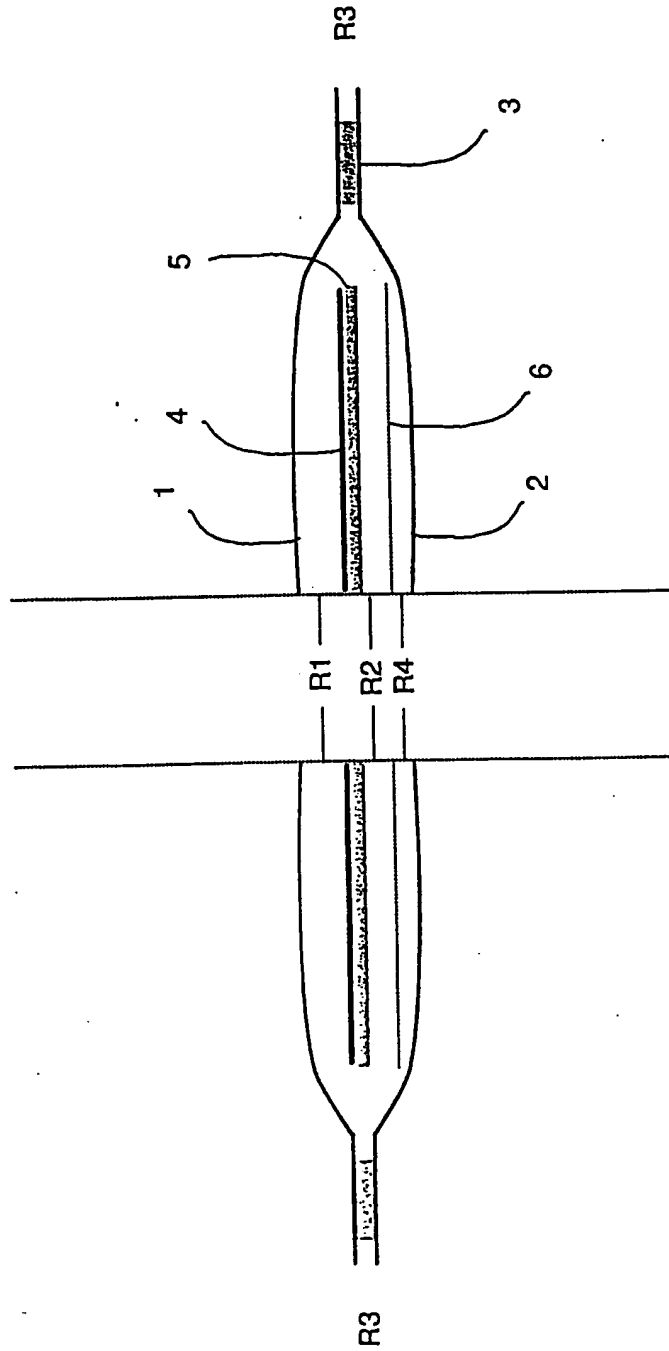


Fig. 1

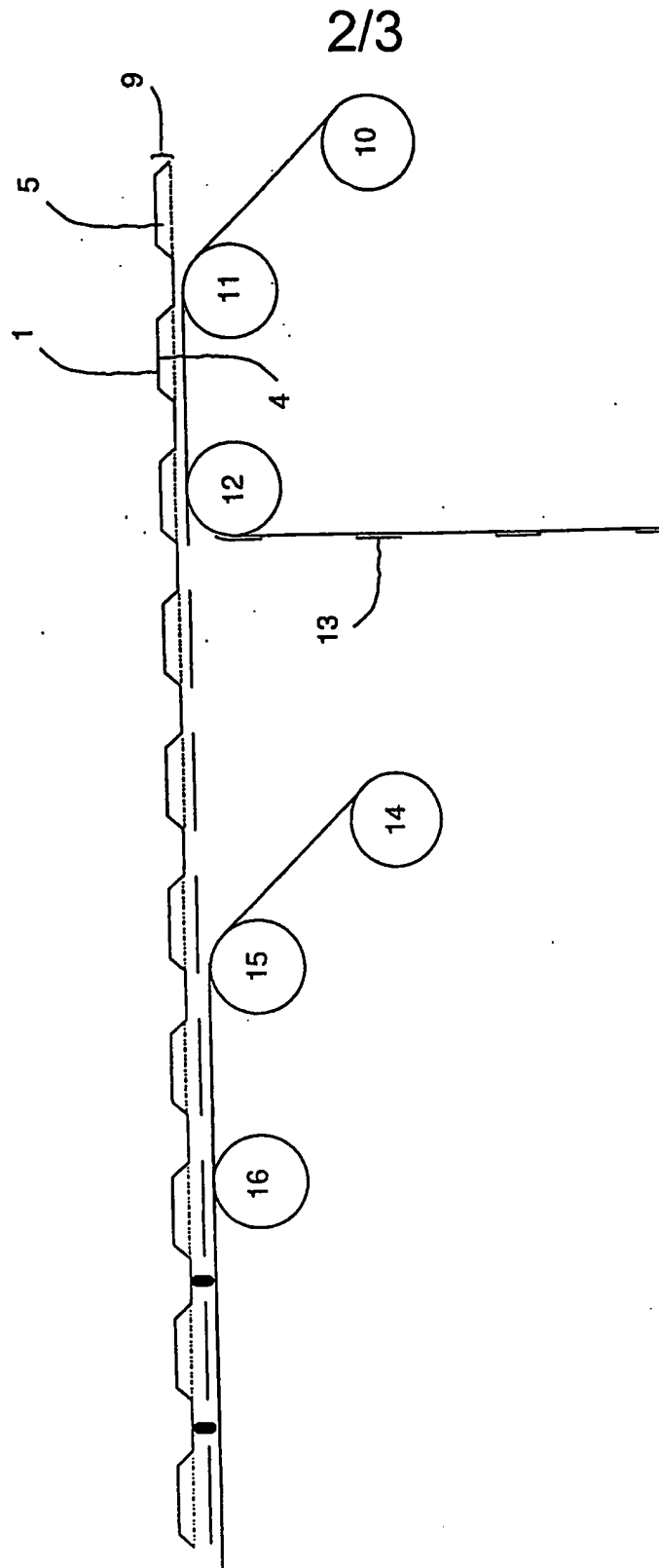


Fig. 2

3/3

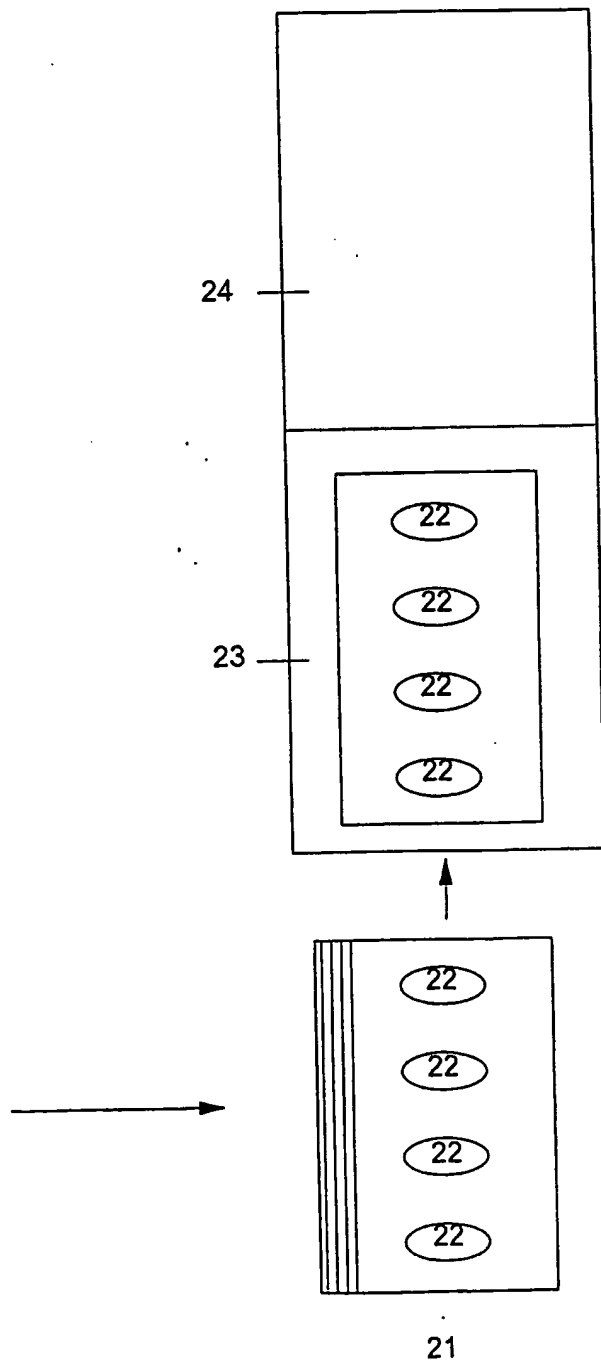


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 99/00658

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A61F 13/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5106629 A (J.V. CARTMELL ET AL), 21 April 1992 (21.04.92), abstract --	1-7,10
A	WO 9743991 A1 (COLOPLAST A/S), 27 November 1997 (27.11.97), abstract --	1-10
A	WO 9800080 A1 (MINNESOTA MINING AND MANUFACTURING COMPANY), 8 January 1998 (08.01.98), abstract --	1-10
A	US 5099832 A (W.J. WARD), 31 March 1992 (31.03.92), abstract --	1-7

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 1 February 2000	Date of mailing of the international search report 07. 03. 2000
Name and mailing address of the International Searching Authority European Patent Office P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel(+31-70)340-2040. Tx 31 651 epo nl. Fax(+31-70)340-3016	Authorized officer Dan Ionesco / MR Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 99/00658

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5397297 A (T.K. HUNTER), 14 March 1995 (14.03.95), abstract --	1-7,10
A	US 5840052 A (O.L. JOHNS), 24 November 1998 (24.11.98), abstract -- -----	1-7,10

INTERNATIONAL SEARCH REPORT
Information on patent family members

02/12/99

International application No.

PCT/DK 99/00658

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5106629 A	21/04/92	AT 106006 T	15/06/94
		AU 624537 B	11/06/92
		AU 6455190 A	26/04/91
		CA 2028009 A,C	21/04/91
		DE 69009140 D,T	22/12/94
		DK 424165 T	05/09/94
		EP 0424165 A,B	24/04/91
		ES 2053121 T	16/07/94
		JP 1851561 C	21/06/94
		JP 3191956 A	21/08/91
		JP 5065184 B	17/09/93
		NZ 235660 A	25/09/92
WO 9743991 A1	27/11/97	AU 2951497 A	09/12/97
		CA 2255930 A	27/11/97
		CN 1219858 A	16/06/99
		EP 0904038 A	31/03/99
WO 9800080 A1	08/01/98	AU 3719397 A	21/01/98
		CA 2259370 A	08/01/98
		EP 0921775 A	16/06/99
US 5099832 A	31/03/92	AT 92743 T	15/08/93
		AU 622928 B	30/04/92
		AU 4122089 A	15/03/90
		CA 1320087 A	13/07/93
		DE 68908313 T	05/01/94
		EP 0360458 A,B	28/03/90
		ES 2045457 T	16/01/94
		GB 2224445 A,B	09/05/90
		JP 2144068 A	01/06/90
		JP 2831394 B	02/12/98
		AT 113821 T	15/11/94
		AU 622660 B	16/04/92
		AU 3402089 A	09/11/89
		CA 1317521 A	11/05/93
		DE 68919265 D,T	06/04/95
		EP 0341045 A,B	08/11/89
		ES 2063817 T	16/01/95
		JP 2023965 A	26/01/90
		JP 2768494 B	25/06/98
		US 5000172 A	19/03/91
US 5397297 A	14/03/95	WO 9628124 A	19/09/96
		EP 0825842 A	04/03/98
US 5840052 A	24/11/98	DE 19602467 A	01/08/96
		ES 2100133 B	01/01/98
		FR 2729849 A	02/08/96
		GB 2297260 A,B	31/07/96
		GB 9600949 D	00/00/00
		IT 1281709 B	26/02/98
		IT MI960118 D	00/00/00